REMARKS

All the pending claims are rejected by the Examiner either under 35 USC §102(b) as allegedly anticipated by Dielacher et al (U.S. Patent No. 5,789,959) or under 35 USC §103(b) over Dielacher in view of Laner (US Patent 4,028,559), O'Brien (US Patent 4,058,742), Miller (US Patent 4,454,430), Spreen (US Patent 5,168,440) and Molthen (US Patent 4,080,585). Claims 3, 4 and 7 are further rejected under 35 USC §112, and the drawing is objected for not including the feature "capacitively" as defined in claim 1. The amended claims have clearly overcome the rejection under 35 USC §112 and the objection to the drawing. Furthermore, the applicants respectfully traverse the rejections under 35 USC §102 and §103 based on the amended claims, which will be explained in detail as below.

The applicants believe a brief explanation of the present invention will be helpful in the examination of the application. The invention discloses a novel network coupler which couples in/out data differentially over two lines, as well as couples in/out energy over the same two lines. In the coupler, two primary coils are coupled to the two lines and a secondary coil is magnetically coupled with the two primary coils to differentially couple the data into and/or out of the two lines. Thus, the data transfer may be disturbed by the fluctuations of the power supply currents. To solve this problem, the present invention teaches that the two primary coils are formed in such a way that currents flowing through the two lines are equal to each other, thus the fluctuations will not induce voltage in the secondary coil. The applicants believe this distinguishing feature is not anticipated by Dielacher.

Dielacher et al teaches a technique to decouple a direct voltage and alternating voltage signal from the two lines. In particular, the direct voltage is tapped from the two lines through a tapping circuitry comprising diodes, resistors and transistors in symmetrical pair. Applicants do

not agree with the Examiner's assertion that Dielacher teaches two primary coils formed in such a way that current flowing through the two lines is equal to each other. In col 4, lines 11-37, Dielacher does teach that the component parameters of the pair of diodes 30, 31, resistors 35, 36 and the transistors 32, 33 match each other so that both current paths are dimensioned symmetrically relative to one another, but the current paths discussed are the current paths in the tapping circuit which is coupled to the two main lines (1, 2), but not the main lines (1, 2) themselves. Such an arrangement is used so that "differential useful signals do not become operative in the drive of the transistors 32, 33" (col, 4, lines 33-35), but there is no mention or discussion of either the possible current difference or fluctuations in the two main lines (1, 2) resulting from the transmission of energy. Dielacher never addresses the problem that the data transfer may be disturbed by the possible fluctuations of currents in the two lines, or the solution that the current flowing through the two lines is kept equal by the forming the two primary coils substantially equal to each other, which is simple to implement.

In addition, none of the other cited patents Laner, O'Brien, Miller, Spreen and Molthen discloses the above distinguishing feature that two primary coils are formed in such a way that a current flowing through the two lines are equal to each other.

For the above reasons, the applicants believe that the invention as defined in the amended independent claim 1 is not anticipated in Dielacher and other cited patents, and thus patentable. Claim 9, which is redrafted as an independent claim including all the features in the amended claim 1, is also patentable. At least for the same reasons, their dependent claims 4-8 and 10-11 are also patentable.

Therefore, reconsideration is here respectfully requested in view of the amended claims and the above remarks. The Examiner is authorized to deduct additional fees believed due from our Deposit Account No. 11-0223.

Respectfully submitted,

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DATED: January 15, 2002

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal service as first class mail, in a postage prepaid envelope, addressed to Box Non-Fee Amendment, Commissioner for Patents, Washington, D.C. 20231 on January 15, 2002.

Dated January 15, 2002

Signed Paula M. Halsey

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REPLACEMENT OF AMENDED CLAIMS 1, 4, 7 AND 9

1. (Amended) A network coupler for network users in a network having a first line (1) and a second line (2) for transmitting both data and energy, comprising:

a first primary coil (4; 13; 21; 32) and a second primary coil (5; 14; 22; 33), each having a first terminal and a second terminal, with said first terminals coupled to said first and second lines (1, 2) respectively and said second terminals interconnected at a power supply point (3; 23; 36) for coupling said energy;

a secondary coil (6; 15; 25; 34; 35) magnetically coupled with said primary coils (4; 13; 21; 32), (5; 14; 22; 33) for differentially coupling said data into and/or out of said first and second lines (1, 2);

wherein said first and second primary coils (4; 13; 21; 32), (5; 14; 22; 33) are formed in such a way that a current flowing through said power supply point (3; 23; 36) is divided into two equal currents flowing in said two lines (1, 2) of said network.

4. (Amended) A network coupler as claimed in claim 1, characterized in that the two primary coils (4; 13; 21; 32), (5; 14; 22; 33) consist of the same material and have the same cross-section, length and number of turns.

7. (Amended) A network coupler as claimed ~~in claim 1, characterized~~ in that the primary coils ~~are formed~~ as metal strips (21, 22) which are led crosswise through the core (24).

9. (Amended) A network user comprising a network coupler used in a network having a first and a second line (1,2) for transmitting both data and energy, said network coupler comprising:

a first primary coil (4; 13; 21; 32) and a second primary coil (5; 14; 22; 33), each having a first terminal and a second terminal, with said first terminal coupled to said first and second lines (1, 2) respectively and said second terminal interconnected at a power supply point (3; 23; 36) for coupling said energy;

a secondary coil (6; 15; 25; 34; 35) magnetically coupled with said primary coils (4; 13; 21; 32), (5; 14; 22; 33) for differentially coupling said data into and/or out of said first and second lines (1, 2);

said first and second primary coils (4; 13; 21; 32), (5; 14; 22; 33) are formed in such a way that a current flowing through said power supply point (3; 23; 36) is divided into two equal currents flowing in said two lines (1, 2) of said network;

wherein said network user is characterized in that the data transferred or received by the network user in the network are coupled into or out of the two lines (1, 2) of the network by means of the network coupler, and in that the energy supply of the network user is ensured by means of the energy which is coupled out of the two lines (1,2) or the network by the network coupler and is made available at the power supply point (3; 23; 36).

11. (New) A network coupler as claimed in claim 1, wherein said first and second primary coils (4; 13; 21; 32), (5; 14; 22; 33) have identical resistance and impedance.